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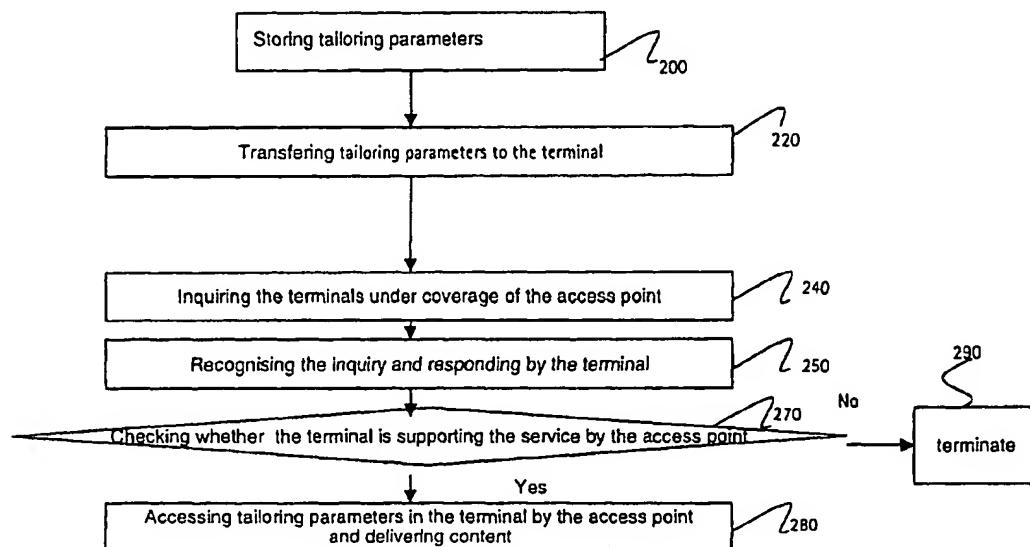
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(54) Title: A METHOD AND SYSTEM FOR DISTRIBUTING ELECTRONIC CONTENT



(57) Abstract: The invention relates to a terminal device (e.g. mobile telephone), memory module (e.g. smart card), method and system for distributing electronic content (e.g. music, games, movies etc.), to the terminal according to predetermined tailoring information. The memory module is releasable and attachable from the terminal device and stores the predetermined tailoring information concerning what electronic content is to be transferred. The terminal device transmits the tailoring information to a network element (e.g. an access point in a short range RF communication system), which transmits the electronic content to the terminal device, according to the tailoring information.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A method and system for distributing electronic content

Field of the invention

The present invention relates to a method and a system for distributing electronic content, to a terminal device and to a memory module such as, but not limited to, a prepaid smart card in the field of the delivery of goods/services.

Description of the Related Art

In the area of distribution of secured content, such as, movies, music, games, information and the like there has been a lot of development lately. There are two important issues, how distribution and payments are handled.

WO 00/30117 describes a method of commercially distributing musical recordings comprising downloading a digital recording of music from a kiosk to a self-contained personal music terminal which stores the recording in an electronic memory and can play the music recording.

There is a need of short-range communication, like Bluetooth, in downloading data from the access points. One of our aims is to develop a solution for how to take advantage of the convergence of the Internet and the Mobile Telecommunication or Mobile Computing fields on terminals that do not have any browsing capability. E.g. the Bluetooth standard is described in Bluetooth specification v.1.0B. One implementation of Bluetooth is described e.g. in publication WO/0018025, such a Bluetooth link between a Bluetooth enabled mobile terminal and a Bluetooth enabled data terminal, such as a PC, is disclosed.

Although Internet is making a breakthrough in the mobile communication world thanks to the introduction of browsers on mobile terminals, it is expected that some alternative models for accessing on the content/information of Internet will be needed. Whereas the browser model is heavily based on user interaction, other models where the user can be more passive make particular sense in mobile environments because of potential limitations in the capabilities of some

terminals, because of the lack of time for browsing, and further due to the importance of accessing information quickly rather than freedom to surf among the various sources of information available. In this kind of context, a terminal having a passive mechanism would help the user in content downloading, and

5 preferably keep aspects of a browser based content access model to keep flexibility in what content can be accessed.

Summary of the invention

According to a first aspect of the invention there is provided a method in distributing electronic content to a terminal device, which method comprises transferring selected electronic content according to predetermined tailoring information, the tailoring information defining what electronic content is transferred to the terminal device, characterised in that the method comprises

10 storing the tailoring information on a memory module, which is separate from and releasably attachable to the terminal device,

15 attaching the memory module to the terminal device,

reading the tailoring information from the memory module to the terminal device, and

20 transferring electronic content to the terminal device according to the tailoring information read from the memory module.

The present invention discloses a method to adjust and tailor the content that is being delivered through a broadcasting type of information access system. The invention enables portability of the preferences or settings in order to allow the

25 user to transfer from one terminal to another.

There is no need for browser software in the terminal for downloading purposes. So instead of surfing on the spot, the only active operation the user has to do is insert a card or information relating to the card to the terminal. The terminal has

30 still the benefits of selecting content already downloaded in the terminal. The terminal may have means for surfing off-line within documents received. The browsing and surfing takes a long time when searching e.g. using search

engines and trying to find the pages the user is interested in or even when surfing from a page to another to find the desired document when connected to the network.

- 5 In many cases the terminal user does not want to be active and browse. Therefore a process that is automatic and comfortable to use is needed. In order to achieve this the content still needs to be selected which is usually done by the user using a browser. Now it is proposed, according to the invention that smart cards, as a preferred embodiment, is the solution for storing selection
- 10 information (in the form of parameters that will be called tailoring parameters) which preferably are stored on the card and entered to the terminal from the card.

According to an embodiment of the invention, the method comprises enabling a service for a terminal having a smart card inserted in the card reader, to provide access by the terminal to the services specified in the card and the content is transferred to the terminal automatically.

- 15 Furthermore, according to the present invention, there is provided a step of subscribing to a service by transferring the tailoring parameters, whereby on basis of the subscription newly issued electronic content can be automatically transferred from an access point to the terminal, the new content containing such information that was not transmitted to the terminal device earlier.
- 20 Furthermore, having the smart card inserted to the terminal and an RF link between the access point and the terminal, the access point reads the tailorization parameters through the RF link. This allows the same terminal device to be used by different card owners, whereby use is not tied to a certain terminal.
- 25 Furthermore, according to the present invention the transfer of tailoring parameters includes a time dependent subscription of the item. Each consumer may purchase the right to listen, read or view digital content for a certain period against a certain fee paid by the smart card. Then the automatic downloading in
- 30

the access point for the specific content is available during that period. This enables also the service provider to control the amount of users and make statistics about the users and also to make decisions about the supply and demand in the specific access points. The access points which are controlled by

5 a service provider would preferably be located in known geographical locations (known to the service provider). The use logs of every access point may be collected based on the geographical location of the access point.

Furthermore, according to an embodiment a subscription of electronic content

10 includes transferring electronic copies of a periodically published item to the terminal device.

Furthermore, according to an embodiment the serial number of the smart card is transferred to the access point, the validity of the number is checked, and in

15 case the card is valid, the content according to the tailoring parameters is transferred to the terminal. The validity of the card can be checked according to the need defined by the content provider.

Furthermore, according to an embodiment of the present invention the transferred data may include different information in digital format and all digital information may be delivered through the access point to the terminal. The digital information may include at least one of the following: movies, music, games, electronic magazines, periodicals, newspaper and tv news (provided to the terminal device over the short range rf connection, such as over Bluetooth via

25 the access point).

Furthermore, according to an embodiment of the present invention the transferred data includes a prepaid amount of the content. The pre-payment may occur on buying the card. The card includes information identifying the content for

30 what the card is payment for, i.e. what content will be delivered from the access point to the terminal. The card identifier identifies the content to be delivered.

The card may be activated after it has been bought in order to avoid any harm which might occur through unallowed utilisation of the cards.

Furthermore, according to an embodiment of the present invention the transferred data includes a series of a movie. This will further allow a content provider to give different content to be delivered and find out which content and to which extent certain content interests the customers.

Furthermore, according to an embodiment of the present invention a certificate is connected to the goods/services or content to be delivered to the terminals. The tailoring parameters with the certificate transferred from the smart card are compared with a certificate stored in a register of certificates in the access point, and allowing delivery only, if a match occurs between the transmitted and the stored certificates.

15

Furthermore, according to an embodiment of the present invention distribution of the content to the access point may occur through a computer network or wireless broadcast network, and it can be made to take place preferably late in the evening, early morning or in nighttime when the network load is low. The delivery time may influence the distribution expenses and might be reflected in the amount of money to be paid for the content (in which case it would affect the number of units deducted from the smart card against the delivered electronic content).

25 Furthermore, according to a further embodiment of the present invention the invention relates to gathering of information on how many mediums, how much data, and what data is transmitted between an access point and a terminal. Thus a count on the copyright payments of musical compositions may be maintained.

30 Furthermore, according to an embodiment of the present invention a solution to control the access of many users to the same access point is illustrated.

According to a second aspect of the invention there is provided a system for distributing electronic content, comprising

 a network connection as a transfer medium for transferring electronic content,

5 a network element for transferring selected electronic content over the network connection according to predetermined tailoring information, the tailoring information defining what electronic content is to be transferred from the network element,

10 a terminal device for receiving electronic content over the network connection, characterised in that the system comprises

 a memory module for storing the tailoring, the memory module being separate from and releasably attachable to the terminal device,

 attaching means for attaching the the memory module to the terminal device,

15 the terminal device being adapted to read the tailoring information from the memory module and to transmit the tailoring information to the network element over the network connection, and

 the network element being adapted to transfer electronic content to the terminal device over the network connection according to the tailoring information.

20

According to a third aspect of the invention there is provided a memory module for storing information and for use with a terminal device, characterised in that the memory module comprises:

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 a storage medium for storing tailoring information relating to specific electronic content, the tailoring information defining the specific electronic content that the memory module authorizes to be transferrable to the terminal device, and

 an interface for mechanically and electrically coupling the memory

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 module to the terminal device, the memory module being releasably attachable by a user to the terminal device for bringing the memory module into mechanical

electrical contact with the terminal device.

According to a fourth aspect of the invention there is provided a terminal device having means for wireless communication, characterised in that the terminal
5 device comprises:

- a storage device for storing tailoring information relating to specific electronic content,
- an interface for mechanically and electrically coupling the storage device to the terminal device, the interface allowing releasable attachment of the
10 storage device by a user to the terminal device for bringing the storage device into mechanical and electrical contact with the terminal device,
- means for reading the tailoring information from the storage device to the terminal device when the storage device is mechanically and electrically connected to the terminal device, the tailoring information defining the specific
15 electronic content that the storage device authorizes as being transferrable to the terminal device,
- means for transmitting the tailoring information over the wireless communication in order to receive electronic content to the terminal device according to the tailoring information read from the storage device.

20

These and other objects and features of the invention will become more apparent from the preferred embodiments described with reference to the attached drawings, which are for the purposes of illustration and not for limiting the invention.

25

Brief description of the drawings

FIG. 1 is a schematic drawing showing an embodiment of a system according to the invention,

30 FIG. 2 illustrates a block diagram of an embodiment of a terminal according to the invention,

FIG. 3 schematically presents a smart card,

FIG. 4 illustrates one embodiment of registers utilised in the invention,

FIG. 5 illustrates an embodiment of an transceiver location register according to the invention,

FIG. 6 illustrates one embodiment of a smart card maintenance and validity register of the invention,

5 FIG. 7 illustrates one embodiment of a Content description and availability database of the invention,

FIG. 8 illustrates a flow chart of an embodiment of a method of content delivery information according to the invention,

FIG. 9 illustrates an embodiment of smart card ID register,

10 Fig. 10 illustrates a block diagram of one embodiment of the access point according to the invention,

FIG. 11 illustrates an embodiment of a method to transmit a signal from a first terminal able to communicate wirelessly with a second terminal according to the invention, and

15 FIG. 12 illustrates one embodiment of how two separate Bluetooth modules are integrated in a single device.

Detailed description

Fig. 1 describes schematically one embodiment of a system according to the invention. A terminal 10 is in wireless communication with an access point 20. The access point 20 may contain information transferable to the terminal 10 or it can be connected to a computer 30 having information transferable to the terminal. Further the computer 30 may be connected to the Internet 40. The Internet 40 represents the computer network, which can be accessed by 25 different user terminals and also by a service or content provider. For example the service provider like a publisher 50 is connected to the Internet 40.

Fig. 2 describes an embodiment of the terminal 10 of the invention more closely by a block diagram. The terminal comprises a display 112, memory (RAM 114 and ROM 116), output/input unit 118, like keypad e.g. for entering text etc., a RF transceiver 120 for communication with other transceivers, e.g. transceivers in access points 20, antenna 122, and controller or CPU 124 for controlling the

various functions of the terminal. A conventional telephone keypad nor QWERTY keypad is not a requirement as the user needs, in the preferred embodiment, only to accept the downloading, make selections from the downloaded items and possibly to browse in the downloaded information. Thus

5 instead of a full keypad only a key with the functionality to control the above functionality is enough. Further in a preferred embodiment of the invention the terminal may have a card reader 126. CPU 124 controls the card reader 126. Further the terminal typically comprises a battery pack (not shown) for power supply. Preferably, but not necessarily the transceiver 120 enables short range,

10 like low power RF communication, like Bluetooth, with the access point 20. The terminal 10 may have a slot (not shown) therein to receive a smart card 58 (in Fig. 3) to the smart card reader 26.

Smart cards or electronic chip cards are usually the size of a conventional credit

15 card and have six or eight electrical contacts on one face and include inside an integrated circuit with memory and may include microprocessors. Data and programs for manipulating the data and communicating outside the card are included in the integrated circuit. In the past the cards, like prepaid cards have been widely used in the purchase of telephone service, particularly in France

20 and Germany, where public pay telephones accept the prepaid cards instead of coins. Typically the prepaid cards are purchased at the post office for a specific amount. The cards are inserted in a public pay telephone, connection is made to the contacts and units of value are removed from the card as the telephone call progresses. The mechanical and electrical specifications of the cards are

25 standardized and one set of standards is published by the ANSI (American National Standards Institute), 11 West 42 Street, New York, N.Y. 10036 under the title "Identification cards-Integrated circuit(s) cards with contacts" ISO 7816-1 and ISO 7816-2. *)

30 Smart cards have been manufactured and are commercially available from several companies including e.g. GEMPLUS Card International, Avenue du Pic de Bertragne, Parc d'activites de la Plaine de Jouques, 13420 Gemenos, France.

Once the prepaid card has been consumed, i.e., all of the units or value of the card has been used in calls, the user has to buy another card or to refill the empty card to continue with the service.

5

The smart card which is purchased in advance and which is inserted into the terminal may be active right after it has been purchased. The activity to the card may be given just for a certain period of time. Thus the activity depends on the time limits given to the card.

10

In case the card is lost and a 3rd party tries to utilize the card the following procedure can be activated to prevent misuse. Before allowing any goods/service to be transferred from the access point, the ID of the terminal, which can be the same as the Bluetooth address, together with the card ID will be transferred to the access point 20. The information of terminal ID may be transferred to the server 50 also from the place of purchase where the user purchases the card so that the card ID and the terminal ID can be linked and sent to the server at the time of the purchase. The access point 20 compares the card ID and the terminal ID combination and if it matches, the access point 15 authorizes transfer of the content from the content provider to the terminal. The ID comparison can also be done in the computer or even more remote from the access point e.g. in the Internet 40. The information of terminal ID may be transferred to the server 50 also from the place of purchase where the user purchases the card so that the card ID and the terminal ID can be linked and 20 sent to the server at the time of the purchase.

25

In Fig. 3 a card, like the smart card 138 referred to above is discussed. The smart card includes CPU 140, smart card card identification code like a serial number 142, tailoring parameters register 144 and contacts 146 for enabling 30 mechanical and electrical contact to the terminal 10 (the card reader 126). Tailoring parameters 144 with card ID are stored in the smart card memory (150). After the card is inserted into the terminal 10 and the information is read

from the card to the terminal the tailoring parameters 144, together with card ID (142) are accessible by the access point 20 via a Bluetooth link (or other short range wireless link) running between an access point/kiosk 20 and the terminal 10. Every time an offer for delivery of goods/services is placed by the access 5 point in terminal, the terminal may have the possibility to accept it, or not. The validity time of the card may be checked by comparing a validity register stored in the smart card 138 and a validity table stored in the access point 20 of the service provider or content provider. The card validity might be based on the fee paid periodically such as monthly or annually. After the paid amount is received, 10 the corresponding entry is occurred in the validity register.

With regard to the various elements of the smart card as being on an integrated circuit, the microprocessor and several registers may be all contained within a single chip. Also the information need not be allocated to unique space within 15 the smart card memory, for example, the various numbers in the registers may be moved around under the control of the microprocessor. This would be in accordance with the design of the particular smart card chip.

The serial number of the smart card and possible other functions like time of 20 validity dates may be written into the integrated circuit at the time of manufacture, or subsequent to manufacture. Any convenient or conventional type of circuit and method for the entry of such data may be used.

In Fig. 4 one embodiment of the registers of the invention is shown. Reference 25 number 80 depicts the location register of access points. The service provider may manage the geographical location information of the access points. The access point may collect information about the users in the access point. The location information may be linked to the computer 30 of the access point 20. The smart card maintenance and validity register 90 may be linked also to the 30 computer 30. Content description and availability database 190 may be part of the computer system 30 as described in Fig. 4. A smart card ID register 70 of the access point gives the possibility to control transfer of data.

An access point location or transceiver location register 80 may contain information about the access points located in the different sites as described in Fig. 4. In Fig. 5 such a register is shown, where the transceiver or the access point ID such as Transceiver No. 1 is presented in one column. Then the location of each access point is described in a second column such as 281001city. The information to deliver can be localized utilizing the location information of the access points. E.g. advertisements may be distributed according to the location and this information can be linked to the cards sold in this specific area. Therefore the smart card ID column having the IDs such as 8139008877 can be added to this register. It will be understood that many other ways to link the smart card ID and the location of access point can be used.

Fig. 6 discloses one example of a smart card maintenance and validity register 90. The register 90 includes smart card ID column, a "Valid" column having validity data of the card in the form of No or Yes informing that the card is either valid or not, a content description column, having content like AAA or BBB, that can be transferred from the access point, a locations column informing the location where the content is available, a "valid until" column informing validity time of the card data e.g. January 2000, and a column "usage units" with information about the usage of the content or how many users have paid for the card or how many transfers from the access point have occurred e.g. 50 or 100 to utilize this information later.

Fig. 7 discloses one example of a register in a Content description and availability database 190. The register 190 has content ID data column and a column with content description data, like News and possibly local news info or other specifying title. Further it may have a column with information about availability data of the content, i.e. in which location the content can be found.

DRM or Digital rights management information data column may have the link to another server where the particular copyright payments may be arranged. Again there can be a column for usage data of the content, again for later utilization of

the data. Again it will be understood that these Figs. 5 to 7 are shown as an example only and plenty of variations can occur.

In Fig. 9 an embodiment of a smart card ID register 70, a tailoring parameters

5 register 72 which takes care of the tailoring of content to be transferred to the terminal, and a possible certificate register 74, with e.g. password, is connected to the goods/services or content register 76, respectively, in case a password is needed (i.e. required) for delivering the content. Comparison between the certificate transferred from the prepaid card and the one in register may be

10 performed in the microprocessor. Alternatively, the comparison could be performed in a separate counter or comparator (not shown).

The registers in Figs. 5-7 and 9 relate quite close to each others and they can be located close to the access point in a preferred embodiment or also in other

15 locations, like in the content provider location, in order to have the possibility of obtaining global content or otherwise additional content. These locations again are not limited to what is presented, but other available solutions can be utilized.

A method of delivering content information in accordance with the invention is

20 further described in the Fig. 8. Having content filtering parameters (ie. tailoring parameters) 144 stored on an smart card 138 in step 200, and after the card inserted into the terminal 10, the information is read from the card to the terminal in step 220. After the user of the terminal 10 has entered the cell of access point 20, the content delivery device or the access point 20 will send an inquiry

25 to the terminal 10 in step 240. If the inquiry is recognized by the terminal 10, the terminal 10 responds to the access point 20 in step 250, and a connection is opened between the terminal 10 and the access point 20. Next in step 270 there is a check whether the terminal is supporting the card application. If "yes", the tailoring parameters are accessible by the access point 20 via a Bluetooth

30 link running between an access point/kiosk 20 and the terminal 10 in step 280. Based on the tailoring parameters, which now have been transferred from the card to the Bluetooth transceiver system of the terminal, the content is delivered

to the terminal also in step 280. If the answer is "no", the connection between the terminal and access point is terminated in step 290.

Tariff data as received from the smart card maintenance and validity database

5 90 is stored in a register in the Content description and availability database 190 for using that information e.g. digital rights management (DRM) purposes, analysis of a user, e.g. for possible preference or behavior control of that particular item downloaded from the network by tracking consumer preferences at the prepaid center of the access point. That information may be used later on

10 to control the availability of different items in that access point. Possibly according to the consumption of the digital content the information (such as the mentioned tariff data) will be arranged to be available closer to the location of the access point in a local cache or proxy type device close to the access point. The station could then provide very fast downloads to the users and the network

15 downloads would not load so much the whole network. However it is appreciated that the downloadable information would be stored at the access point e.g. once a month as a package like Magazine No 1, Magazine No 2, Magazine No. 3 etc, Movie No. 1, Movie No. 2, Movie No. 3 etc. according to the publication of that information by the content provider like the publishing company. The storage of

20 the information package at the access point may occur from almost any reproducing/editing/recording storage apparatus in the form of information transfer. The transfer could happen through a network connection or the information can be distributed to the shop as hardware like on a CD, MP3, a Digital Video Disc (DVD), a video cassette tape et al. When received the

25 merchant can install the information to the access point from the received hardware. Other possible distribution channels can be wireless mobile communication such as GPRS, EDGE, 3G, UMTS, DVB-T or other. Then the respective receiver system would be installed in the access point. DVB-T transmission could happen in the time when the transmission time is cheap and

30 the usage of the network is low, e.g. in the late evening, early morning or at nighttime.

When recording the downloadings in the access points, and adding that information to the disclosed registers (Fig 5-7) it will reveal, how many users have downloaded content and what content. Therefore the existence of the copyright obligations of the musical compositions are easily controlled and the 5 copyright owners or media industry can collect royalties for their copyrights.

When the smart card is read by the card reader and validity of the card is confirmed, the selected subscription is available to view and listen. The music content may include at least one of music code (country code, work code), name 10 of musical composition, time of musical composition, name(s) of artist(s), country code of artist(s), manufactured date, preview availability, owner(s) of the original disc, country code(s) of the owner(s) of the original disc, co-owner(s) and country code(s) of the co-owner(s).

15 The so called OBEX or Object Exchange protocol can be used as a transport mechanism for the tailorization parameters between the access point and the receiving terminal device. OBEX is rather flexible and simple and can be used within the framework of one of the existing Bluetooth profiles, in case the process of retrieving tailorization parameters shall be open to just any Bluetooth terminal in the future. 20

As already said in order to allow for tailorization of the content to be delivered on a terminal per terminal basis, tailorization parameters are stored on a smart card. The information to be delivered to that particular terminal is tailored in 25 accordance with the preferences, setting, etc. Examples of those might be but not limited those as e.g. described in US patent 5,754,939, author, language in which document is written, date of creation, date of last update, length in words, reading level, quality of document as rated by an editorial agency, list of other readers who have retrieved this document (associative), attributes for each 30 target object, first two digits of zip code, first three digits of zip code, entire five-digit zip code, distance of residence from advertiser's nearest physical storefront, annual family income, number of children, list of previous items purchased by

this potential customer (associative) that are stored as tailorization parameters on the smart card. Information delivery then takes place, again using a Bluetooth link between the delivering device and the terminal. However, other possibilities to include to transferable data may be catalogues of decorations. The user will

5 load wall paper models to the terminal and then "carry" this information home. Then he/she can view these patterns against his/her house walls. The images, photographs, on-line albums, applications like Java applets will be included. The parameters to filter the content may comprise subscription of magazine issues Nos. 1 to 3, movie series: e.g. first three episodes, vouchers like one free copy

10 of coming new magazine as an advertisement.

A further embodiment of the invention will be illustrated regarding a situation when many terminals will access the services provided by the access point. Whereas the present invention can be implemented by using one short range rf

15 transceiver at both the terminal device and the access point this further embodiment comprises an access point being implemented with two transceivers, one being used for receiving tailoring parameters from the terminal device and another being used for transmitting the electronic content to the terminal device. Accordingly the second terminal 20 includes at least a first transceiver

20 module 104 and a second transceiver module 106 (Fig. 10). A first communication link 118 is established between the first terminal 20 and the first transceiver module 104 of the second terminal 20, a communication bus 120 between the first transceiver module 104 of the second terminal 20 and the second transceiver module 106 of the first terminal 10 for transferring information on the

25 communication between the first terminal (the access point) 20 and the first transceiver module 104 of the second terminal. A second communication link 122 between the second transceiver module 106 and the first terminal 20 is established based on the information received from the first transceiver module 10,

30 respectively. It will be understood that the number of the transceiver modules may differ according to the needs of the specific site etc.

According to a further embodiment of the present invention Fig. 11 discloses a method to transmit a signal from a first terminal able to communicate wirelessly with a second terminal. In the first step 300 the second terminal 20 including at least a first transceiver module 104 and a second transceiver module 106, establishes a first communication link 118 between the second terminal 10 and the first transceiver module 104 of the first terminal. In step 302 information is transferred on the first communication between the first terminal 10 and the first transceiver module 104 of the first terminal through a communication bus 120 between the first transceiver module 104 of the second terminal and a second transceiver module 106. In step 304 a second communication link 122 is established between the second transceiver module 106 and the first terminal 10 identified by the information received from the first transceiver module 104, respectively.

15 According to the invention the first and the second transceiver modules 104 and 106 have a predetermined function, the first one makes inquiries and transfers information from the terminal 20 to the second transceiver module 106 so that the second terminal 20 from its second transceiver module 106 may contact the first terminal 10 in order to deliver the data to the first terminal 10. The above 20 method makes it possible of enhancing efficiency on data transfer .

Figure 12 illustrates one embodiment of how the two separate Bluetooth modules 104, 106 with specialized roles may be integrated in a single device. In this example inquiries, and Service Discovery functions are handled in Bluetooth module one 104 and RFCOMM based functions (specified in the Bluetooth Specifications) and other user data related traffics are handled in Bluetooth module two 106. In the Figure 11 Bluetooth module one 104 and Bluetooth module two 106 each include three separate Bluetooth chips 130, but the number of chips may be anything from one to any number, depending on the 25 need. Each chip 130 comprises a driver part 132, a module part 134 that implements at least the lower layers of the Bluetooth protocol stack (whether the whole protocol stack or only the lower layers are implemented depends on the 30 need).

role of the controlling entity or computer that the group of transceivers is linked to) and a RF transceiver part 136, as would be known to a person skilled in the art. According to the invention there are two operationally separate Bluetooth modules 104 and 106, Bluetooth module one 104 and Bluetooth module two 106. The modules 104 and 106 have separate baseband addresses allowing the modules 104 and 106 to operate independently. Module one 104 is discoverable and connectable to other Bluetooth enabled devices 10. Module two 106 is non-discoverable and non-connectable to other Bluetooth enabled devices 10, so the inquiries and other link and service information is not reachable with this module 106. Between the modules is a data bus 120, allowing data transfer between the modules 104 and 106.

A browser based content access model, such as is known from regular web browsers, has appealing features that can be included in a terminal device according to the invention. The first very attractive feature is the ability to tailor the content to one's needs and preferences. In a browser based model, typically the user proactively creates his personal profile on an Internet content aggregator site and thereafter sees content that is tailored to his profile each time he accesses this content aggregation site. Typical examples are "My Yahoo" or "My Lycos". Content delivered by email can also be tailored, at the initiative of the user who generally fills in a profile and describes to an aggregator web site the type of content it wishes to receive by mail. A second very appealing feature of browser based models is the fact that content tailoring information that are specified using a browser are stored on the content providing site (typically a content aggregator), and not on a particular device; which gives a lot of flexibility in term of what device can be used to access to the content. In the above example of "My Yahoo", the user can access its tailored "My Yahoo" page, no matter which PC or PDA it is using to connect to the Internet. An efficient passive content access model shall as much as possible offer content tailoring capabilities that are independent of any particular platform.

Thus, the present invention being concerned about receiving at a terminal device, specific electronic content based on tailoring parameters read from a smart card and delivered to the access point, the terminal device can still be equipped with regular web or WAP browser for also accessing other information except

5 what is specified by the tailoring parameters.

It will be apparent, therefore, that the illustrative embodiments described are only examples and that various modifications can be made in the construction, method and arrangement within the scope of the invention as defined in the

10 appended claims.

Claims

1. A method in distributing electronic content to a terminal device, which method comprises transferring selected electronic content according to predetermined tailoring information, the tailoring information defining what electronic content is transferred to the terminal device, **characterised in that the method comprises**
 - storing the tailoring information on a memory module, which is separate from and releasably attachable to the terminal device,
 - 10 attaching the memory module to the terminal device,
 - reading the tailoring information from the memory module to the terminal device, and
 - transferring electronic content to the terminal device according to the tailoring information read from the memory module.
- 15 2. A method according to claim 1, **characterised in that the method comprises** before the step of transferring electronic content to the terminal device, the step of:
 - transmitting the tailoring information from the terminal device to another 20 device over an rf link, and
 - the step of transferring electronic content to the terminal device comprises
 - transferring the electronic content to the terminal device over the rf link.
- 25 3. A method according to claim 2, **characterised in that the rf link is a short range communication rf link, and the another device is an access point of a short range communication system.**
4. A method according to claim 3, **characterised in that method comprises:**
 - the terminal device entering the coverage area of the access point,
 - 30 the access point sending an inquiry to the terminal device,
 - the terminal device responding to the inquiry,
 - transmitting the tailoring information to the access point, and

transferring the electronic content from the access point to the terminal device according to the tailoring information received from the terminal device.

5 5. A method as claimed in claim 3, **characterised** in that the method comprises:

10 automatically transferring new electronic content from the access point to the terminal device, the new electronic content fulfilling the tailoring information requirements and being determined to not having been transferred to the terminal device earlier.

6. A method as claimed in claim 1, **characterised** in that the tailoring information includes time dependent subscription period defining the period within which electronic content is transferred to the terminal device.

15 7. A method as claimed in claim 6, **characterised** in that the electronic content includes copies of a periodically published item.

20 8. A method as claimed in claim 1, **characterised** in that the memory module is a smart card.

9. A method as claimed in claim 8, **characterised** in that the method further comprises

25 transferring the serial number of the smart card to the access point, checking the validity of the smart card based on the serial number, and having determined the smart card to be valid, transferring the electronic content to the terminal device.

30 10. A method as claimed in claim 1, **characterised** in that the electronic content is in the form of electronic goods or services.

11. A method as claimed in claim 10, **characterised** in that the electronic content is at least one selected from the group of: movies, music, games, electronic magazines, periodicals, newspaper, tv-news.
- 5 12. A method as claimed in claim 3, **characterised** in that before the step of transferring the electronic content to the terminal device, the method comprises the step of:
transmitting a prepaid amount of electronic money from the terminal device to the access point.
- 10 13. A method as claimed in claim 3, **characterised** in that the electronic money is stored in the memory module, and the electronic money is deducted from the memory module before the step of transmitting the prepaid amount of electronic money from the terminal device to the access point.
- 15 14. A method as claimed in claim 10, **characterised** in that the electronic content includes a series of movies.
- 20 15. A method as claimed in claim 1, **characterised** in that the transferring of the electronic content to the terminal device is delayed to a time of day when the network load is on a relatively low level.
16. A method as claimed in claim 3, **characterised** in that the method comprises:
25 incorporating a first transceiver in the access point for communicating with the terminal device over the short range rf link, and
incorporating a second transceiver in the access point for communicating with the terminal device over the short range rf link,
using the first transceiver to receive the tailoring information from the terminal device,
30 transferring the tailoring information received by the first transceiver to the second transceiver of the access point, and

transferring the electronic content to the terminal device according to the tailoring information using the second transceiver.

17. A system for distributing electronic content, comprising

5 a network connection as a transfer medium for transferring electronic content,

 a network element for transferring selected electronic content over the network connection according to predetermined tailoring information, the tailoring information defining what electronic content is to be transferred from

10 the network element,

 a terminal device for receiving electronic content over the network connection, **characterised in that the system comprises**

 a memory module for storing the tailoring, the memory module being separate from and releasably attachable to the terminal device,

15 attaching means for attaching the the memory module to the terminal device,

 the terminal device being adapted to read the tailoring information from the memory module and to transmit the tailoring information to the network element over the network connection, and

20 the network element being adapted to transfer electronic content to the terminal device over the network connection according to the tailoring information.

18. A memory module for storing information and for use with a terminal device, **characterised in that the memory module comprises:**

 a storage medium for storing tailoring information relating to specific electronic content, the tailoring information defining the specific electronic content that the memory module authorizes to be transferrable to the terminal device, and

30 an interface for mechanically and electrically coupling the memory module to the terminal device, the memory module being releasably attachable by a user to the terminal device for bringing the memory module into mechanical

and electrical contact with the terminal device.

19. A memory module as claimed in claim 18, **characterised** in that the memory module is a smart card.

5

20. A memory module as claimed in claim 18, **characterised** in that the memory module comprises a storage medium for storing electronic money to be used as payment for the specific electronic content that the tailoring information relates to.

10

21. A terminal device having means for wireless communication, **characterised** in that the terminal device comprises:

 a storage device for storing tailoring information relating to specific electronic content,

15 an interface for mechanically and electrically coupling the storage device to the terminal device, the interface allowing releasable attachment of the storage device by a user to the terminal device for bringing the storage device into mechanical and electrical contact with the terminal device,

 means for reading the tailoring information from the storage device to
20 the terminal device when the storage device is mechanically and electrically connected to the terminal device, the tailoring information defining the specific electronic content that the storage device authorizes as being transferrable to the terminal device,

 means for transmitting the tailoring information over the wireless communication in order to receive electronic content to the terminal device according to the tailoring information read from the storage device.

1/11

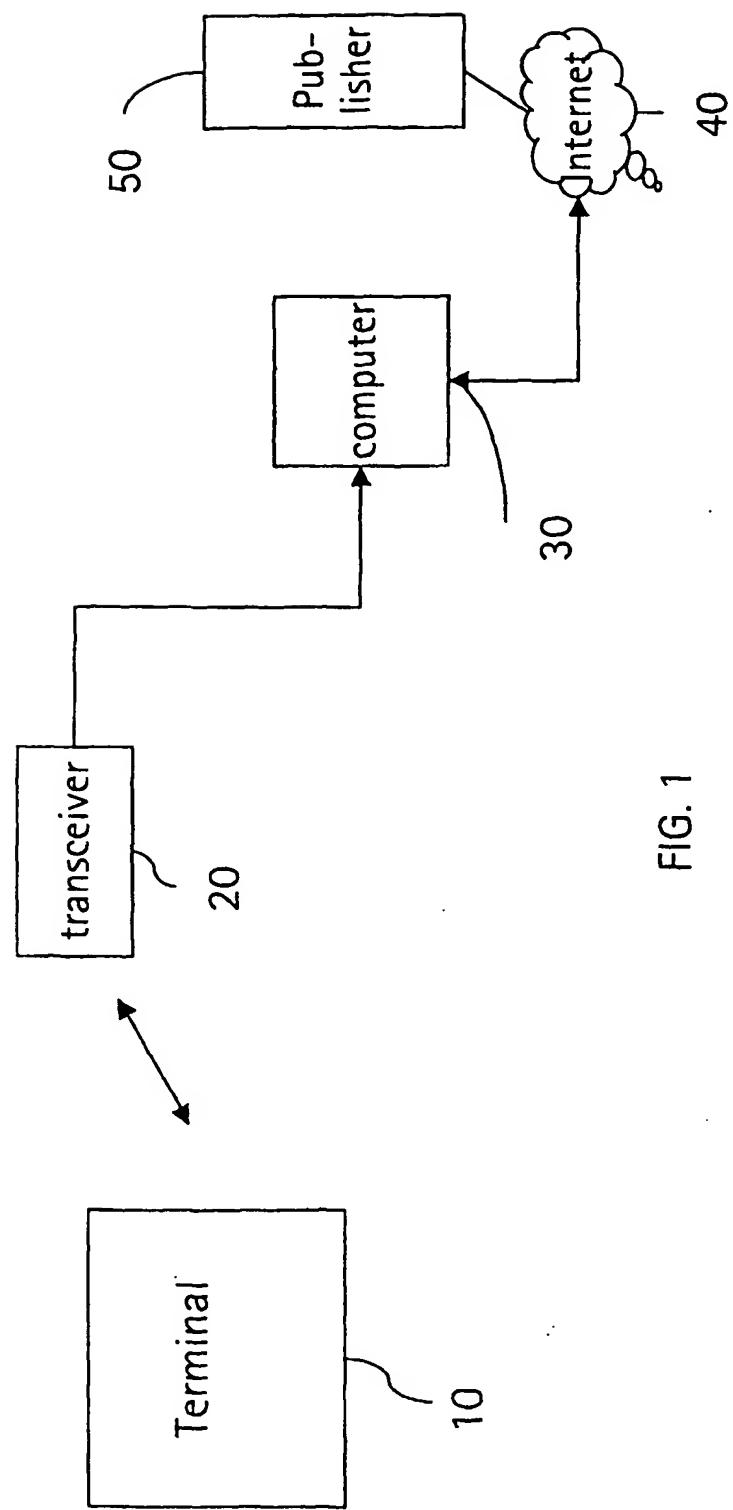
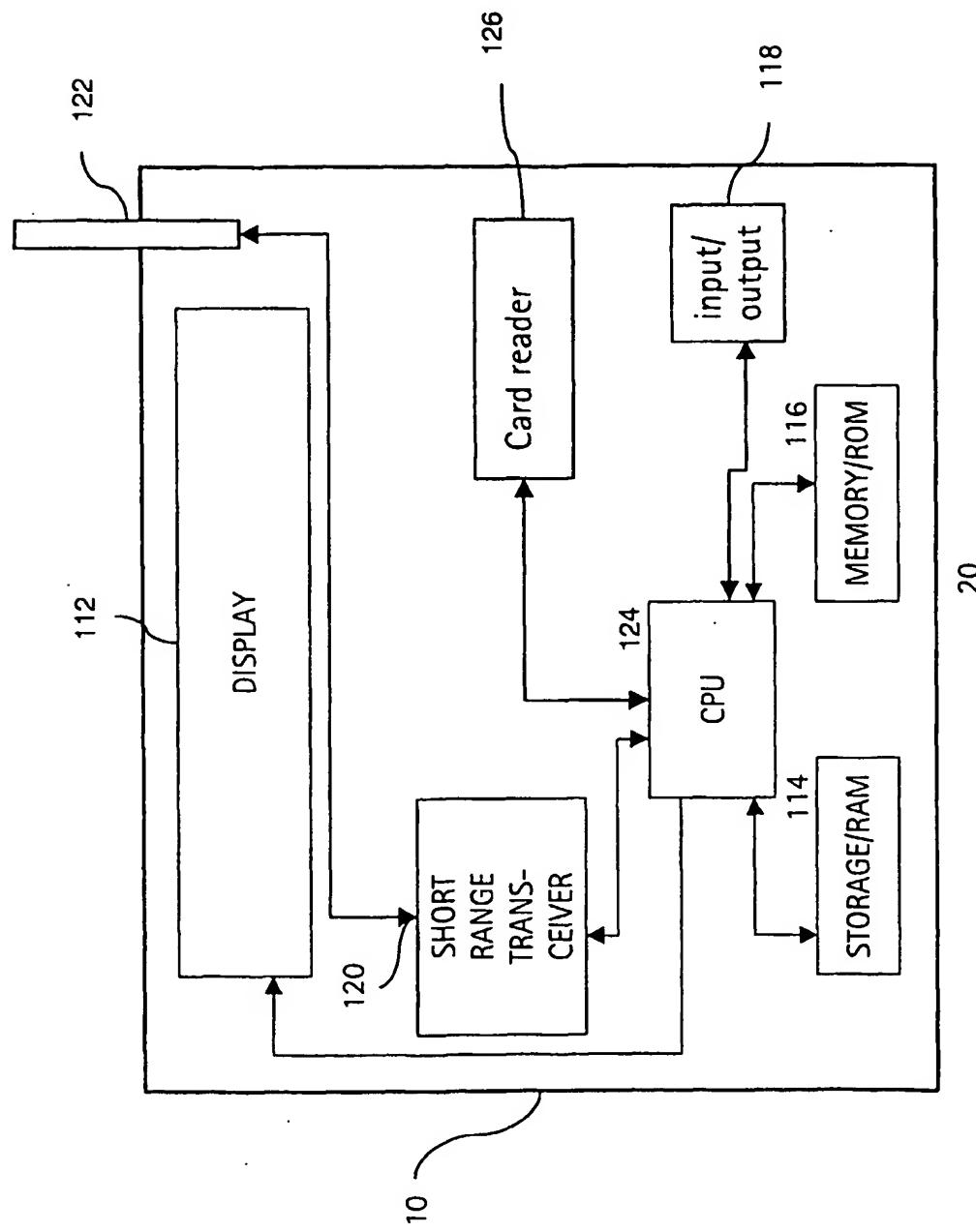


FIG. 1

2/11

FIG. 2



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3/11

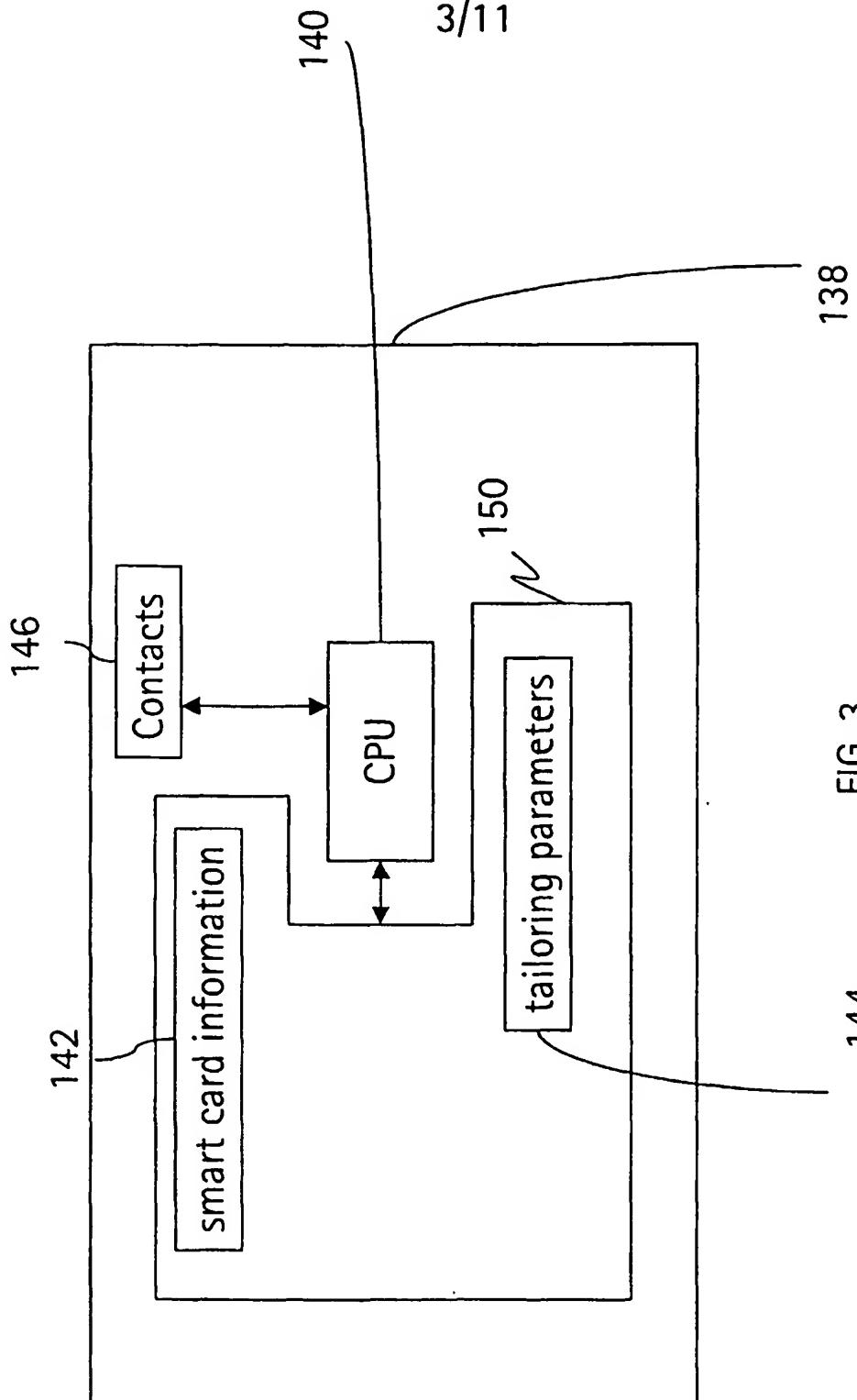


FIG. 3

4/11

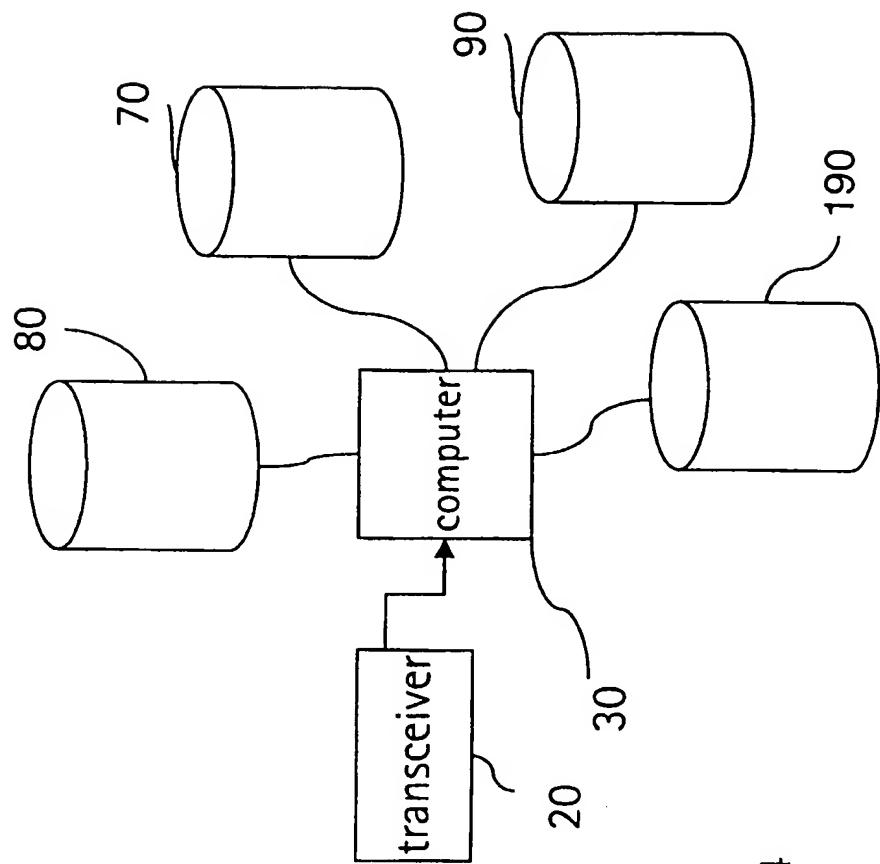


FIG. 4

5/11

Transceiver location register

| Transceivers | Locations | IC card ID |
|-------------------|------------|------------|
| Transceiver No. 1 | 281001city | 8139008877 |
| Transceiver No.2 | 281002city | 8134567888 |
| Transceiver No. 3 | 281003city | 8134567733 |

FIG. 5

Smart card maintenance and validity register

FIG. 6

| Smart card ID | Valid | Content | Locations | Valid Until | Usage units |
|---------------|-------|---------|------------|-------------|-------------|
| 8139008877 | Yes | AAA | 281001city | Jan 2000 | 50 |
| 8139008878 | No | BBB | 281001city | Jan 2000 | 100 |
| 8139008879 | No | CCC | 281001city | Jan 2000 | 100 |

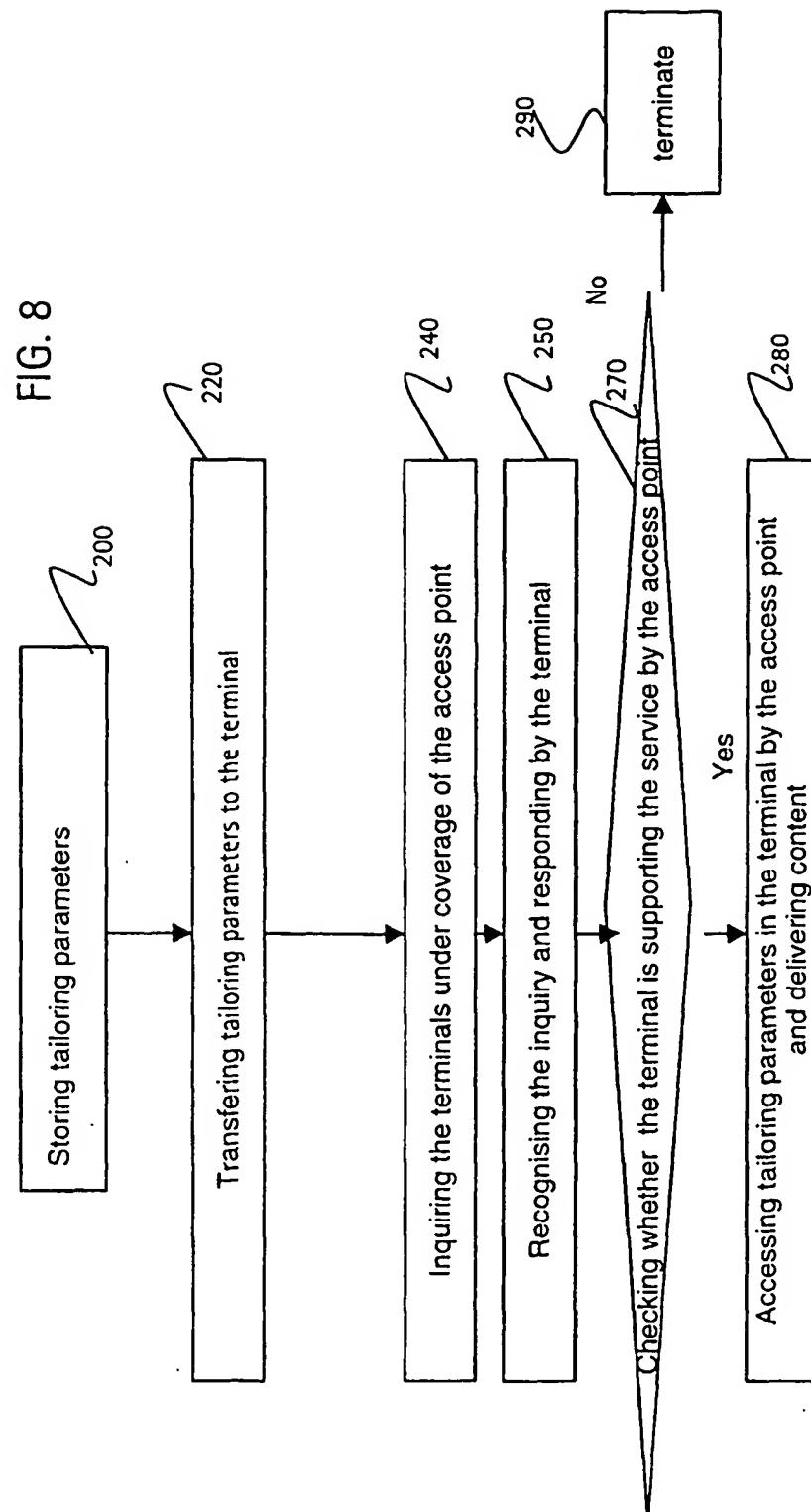
6/11

Content description and availability database

FIG. 7

| Content ID | Content description | Availability in Location | DRM | Number of users subscribe |
|------------|---------------------|--------------------------|-------------|---------------------------|
| AAA | News | All | DRM Inc. | 500 |
| BBB | Short movies | 281001city | WebTV Inc. | 40 |
| CCC | Music | All | Eurovisio n | 7500 |

7/11



8/11

FIG. 9

| Tailoring parameters | Certificate register | Content register | Content register |
|----------------------|----------------------|------------------|------------------|
| A | Key 1 | AAA | |
| B | Key 2 | BBB | |
| C | Key 3 | CCC | |

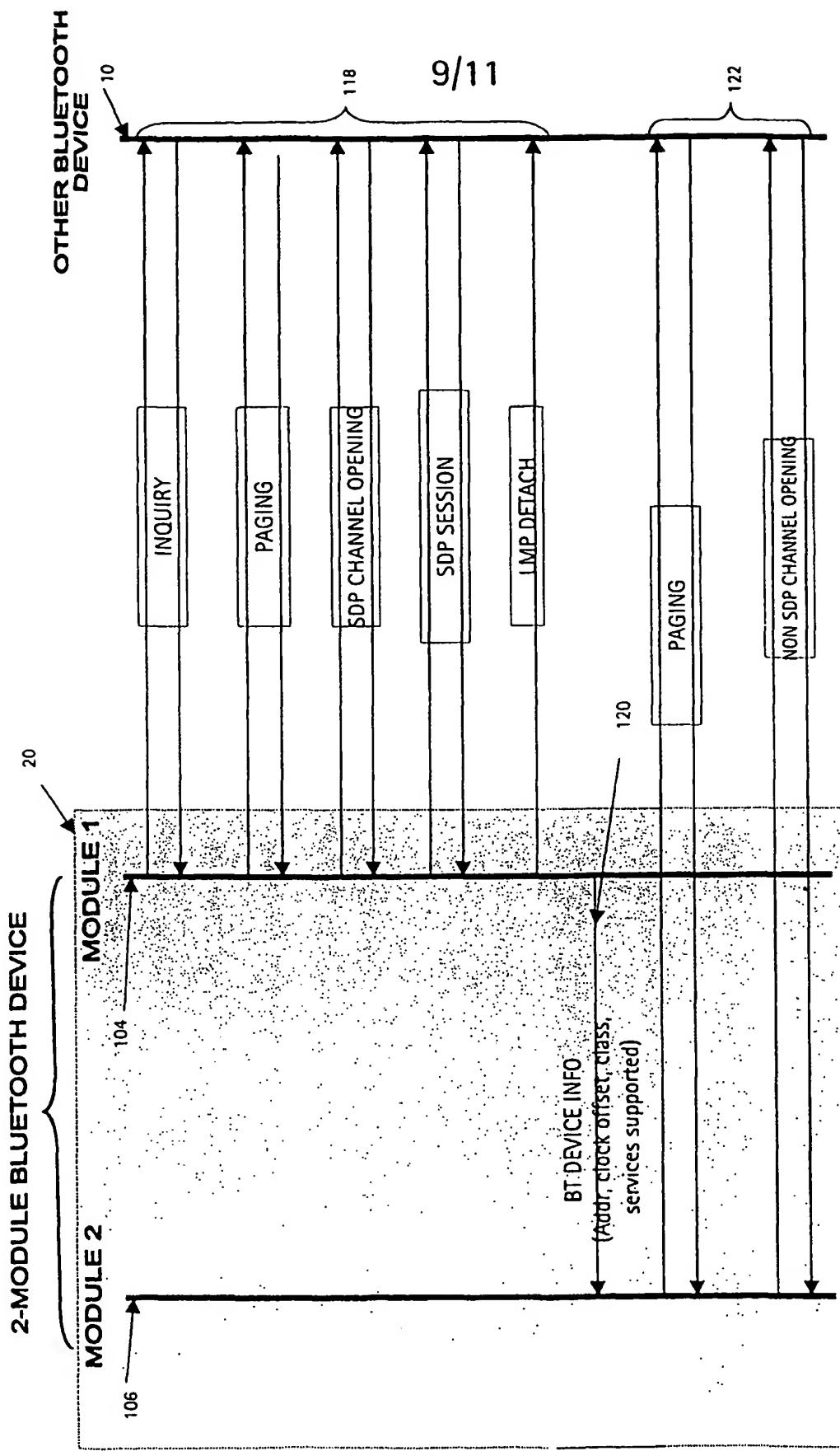


Figure 10:

10/11

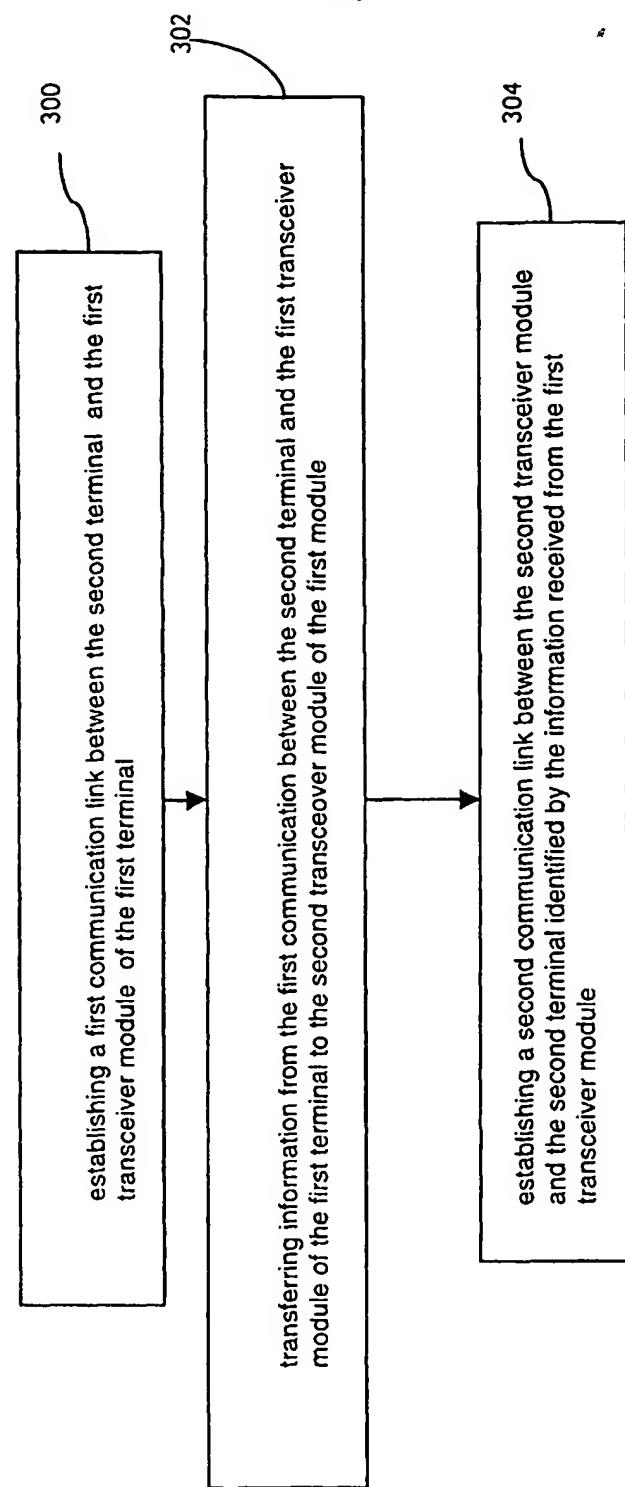


FIG. 11

11/11

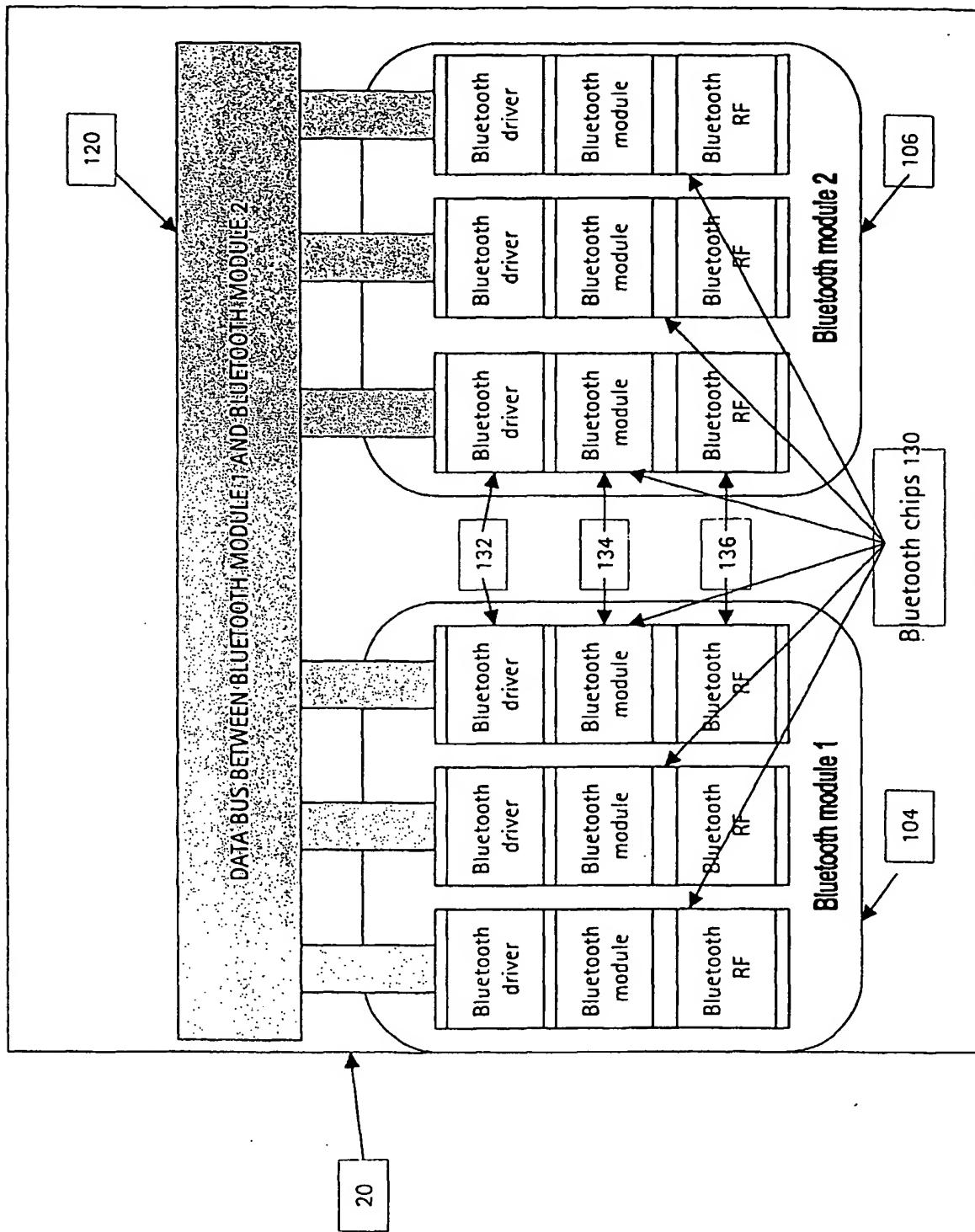


Figure 12:

INTERNATIONAL SEARCH REPORT

International application No.:

PCT/SE/01035

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 17/60, H04L 12/28, H04M 1/21

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F, G07F, H04Q, H04M, H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

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- * Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
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- "&" document member of the same patent family

Date of the actual completion of the international search

14 February 2002

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP/01035

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28/01/02

International application No.

PCT/FI 01/01035

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